Atterney Docket No. 58982.000010 Serial No.: 09/767,680

III. Amendments of the Claims

Please cancel claims 2 and 3 and enter the amendments to claims 1, 4, 5, 7, 8, 10, 13, 15, 16 and 17 as follows:

- 1. (Currently Amended) A culturally modified lactic acid bacterial cell that has, relative to the cell from which it is derived, an increased content of a perphyrin compound been treated with a perphyrin-containing substrate to cause the cell to contain at least 0.1 ppm on a dry matter basis of a perphyrin compound.
- 2. (Cancelled)
- 3. (Cancelled)
- 4. (*Currently Amended*) A cell according to claim 3 <u>1</u> that contains at least 0.1 ppm on a dry matter basis of a cytochrome.
- (Currently Amended) A cell according to claim 4 1 that contains at least
 ppm on a dry matter basis of cytochrome d.
- 6. (Original) A cell according to claim 1 which is of a bacterial species selected from the group consisting of Lactococcus spp., Lactobacillus spp., Leuconostoc spp., Pediococcus spp., Streptococcus spp., Propionibacterium spp., Bifidobacterium spp. and Oenococcus spp.
- 7. (*Currently Amended*) A cell according to claim 6 where the bacterial species is of *Lactococcus lactis*, including *Lactococcus lactis* strain CHCC373 deposited under the accession number DSM12015.
- 8. (*Currently Amended*) A cell according to claim 1 which, when it <u>is</u> in the form of a cell suspension, is inoculated in a concentration of 10⁷ cells/ml into low pasteurised skimmed milk having 8 ppm of dissolved oxygen and leaving the milk



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is allowed to stand for about two hours at a temperature of about 30°C, the cell consumes at least 25% of the dissolved oxygen.

- 9. *(Original)* A cell according to claim 8 where the cell consumes at least 50% of the dissolved oxygen.
- 10. (*Currently Amended*) A cell according to claim 1, which, relative to the a cell from which it is derived, has a decreased <u>NADH oxidase (NOX)</u> activity, and/or a decreased <u>lactate dehydrogenase (LDH)</u> activity, or a decreased <u>NOX activity and decreased LDH activity</u>.
- 11. (Original) A cell according to claim 10 that has a NOX activity which is decreased by at least 10%.
- 12. (Original) A cell according to claim 10 that has a LDH activity which is decreased by at least 10%.
- 13. (*Currently Amended*) A starter culture composition comprising the eulturally modified lactic acid bacterial cell of claim 1.
- 14. (Original) A composition according to claim 13 where the composition is in the form of a frozen, liquid or freeze-dried composition.
- 15. (*Currently Amended*) A composition according to claim 13 containing comprising an amount of viable culturally modified lactic acid bacterial cells which is in the range of 10⁴ to 10¹² CFU per g.
- 16. *(Currently Amended)* A composition according to claim 13 which comprises modified lactic acid bacterial cells of two or more different lactic acid bacterial strains.

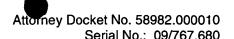


- 17. (*Currently Amended*) A composition according to claim 13 which further comprises at least one component enhancing the viability of the bacterial cell during storage including a bacterial nutrient and/or a cryoprotectant.
- 18. (*Previously Amended*) A method of reducing the oxygen content in a food or feed product or in a food or feed product starting material comprising adding to the product or to the starting material an effective amount of the <u>culturally modified lactic acid bacterial cells according to claim 1.</u>
- 19. (Original) A method according to claim 18 wherein the amount of modified cell is in the range of 10⁴ to 10¹² CFU per g.
- 20. (Original) A method according to claim 18 wherein the starting material for the food product is selected from the group consisting of milk, a vegetable material, a meat product, a fruit juice, a must, a wine, a dough and a batter.
- 21. (Previously Amended) A method of improving the shelf life and/or the quality of an edible product comprising adding to the product an effective amount of the culturally modified lactic acid bacterial cells according to claim 1.
- 22. (Previously Amended) A method of preparing a fermented food or feed product, comprising adding an effective amount of the culturally modified lactic acid bacterial cell according to claim 1 to a food or feed product starting material, wherein the cell is capable of fermenting said starting material to obtain the fermented food or feed.
- 23. (Original) A method according to claim 22 wherein the starting material for the food product is selected from the group consisting of milk, a vegetable material, a meat product, a fruit juice, a must, a wine, a dough and a batter.



- 24. (Original) A method according to claim 23, wherein the resulting fermented food product is a dairy product including a product selected from the group consisting of cheese and buttermilk.
- 25. (Previously Amended) Use of the lactic acid bacterial cell of claim 1 for the production of a metabolite produced by the cell or by a non-modified cell co-cultivated therewith.
- 26. *(Currently Amended)* Use according to claim 25 where the metabolite is selected from the group consisting of <u>a lactate</u>, lactic, acetaldehyde, α-acetolactate, acetoin, acetate, ethanol, diacetyl and 2,3-butylene glycol.
- 27. (Previously Amended) Use of the lactic acid bacterial cell of claim 1 for the production of a bacteriocin.
- 28. *(Original)* Use according to claim 27 where the bacteriocin is selected from the group consisting of nisin, reuterin and pediocin.
- 29. (Previously Added)) A method of reducing the oxygen content in a food or feed product or in a food or feed product starting material comprising adding to the product or to the starting material an effective amount of the starter culture composition according to claim 13.
- 30. (Previously Added) A method of improving the shelf life and/or the quality of an edible product comprising adding to the product an effective amount of the starter culture composition according to claim 13.
- 31. *(Currently Amended)* A method of preparing a fermented food or feed product, comprising adding an effective amount of the composition of claim 13 to





a food or feed product starting material, wherein the composition is capable of fermenting said starting material to obtain the fermented food or feed <u>product</u>.

- 32. (Previously Added) Use of the composition of claim 13 for the production of a metabolite produced by the composition or by a non-modified cell co-cultivated therewith.
- 33. (Previously Added) Use of the composition of claim 13 for the production of a bacteriocin.

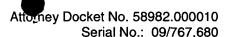
Kindly add new claims 34-52 as follows.

- 34. (New) A cell according to claim 6, where the bacterial species is

 Lactococcus lactis strain CHCC373 deposited under the accession number

 DSM12015.
- 35. (New) A composition according to claim 13 which includes a bacterial nutrient, a cryoprotectant or a bacterial nutrient and a cryoprotectant.
- 36. (New) A cell according to claim 1 which contains at least 0.2 ppm on a dry matter basis of a porphyrin compound.
- 37. (New) A cell according to claim 1 which contains at least 1 ppm on a dry matter basis of a porphyrin compound.
- 38. (*New*) A cell according to claim 1 which contains at least 5 ppm on a dry matter basis of a porphyrin compound.
- 39. (*New*) A cell according to claim 1 which contains at least 20 ppm on a dry matter basis of a porphyrin compound.
- 40. (*New*) A cell according to claim 1 which contains at least 60 ppm on a dry matter basis of a porphyrin compound.





41. (*New*) A cell according to claim 1 which contains at least 80 ppm on a dry matter basis of a porphyrin compound.

- 42. (*New*) A cell according to claim 1 which contains at least 100 ppm on a dry matter basis of a porphyrin compound.
- 43. (New) A cell according to claim 1 which contains at least 0.5 ppm on a dry matter basis of a cytochrome.
- 44. (*New*) A cell according to claim 1 which contains at least 10 ppm on a dry matter basis of a cytochrome.
- 45. (*New*) A cell according to claim 1 which contains at least 40 ppm on a dry matter basis of a cytochrome.
- 46. (*New*) A cell according to claim 1 which contains at least 70 ppm on a dry matter basis of a cytochrome.
- 47. (*New*) A cell according to claim 1 which contains at least 90 ppm on a dry matter basis of a cytochrome.
- 48. (*New*) A cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 1% per hour.
- 49. (*New*) A cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 20% per hour.
- 50. (*New*) A cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 40% per hour.
- 51. (New) A cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 70% per hour.





- 52. (*New*) A cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 90% per hour.
- 53. (*New*) A method for the production of a metabolite comprising adding the composition of claim 13 to a starting material and maintaining the resulting mixture under conditions suitable to produce the metabolite.
- 54. (*New*) A method for the production of a metabolite comprising adding the composition of claim 13 and a non-modified cell co-cultivated with the composition and maintaining the resulting mixture under conditions suitable to produce the metabolite.
- 55. (*New*) A method for the production of a bacteriocin comprising adding the composition of claim 13 to a starting material and maintaining the resulting mixture under conditions suitable to produce bacteriocin.

